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FOREIGN AGRICULTURE

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Tropical Agriculture—Competitive or Complementary?

Another Look at Mexico

Agricultural Research in the Soviet Union

UNITED STATES DEPARTMENT OF AGRICULTURE • FOREIGN AGRICULTURAL SERVICE

FOREIGN AGRICULTURE

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To report and interpret world agricultural developments.

Problems of Plenty

November, the month of Thanksgiving, is a traditional time to take stock of what the harvest has been. This November we find that not only has the United States gathered bumper crops but so have many other countries. World bread-grain production, for example, appears to have been at an alltime high in 1958.

Unfortunately, the road between the harvest fields and the ultimate consumers remains a rocky one. The mere fact that there are increased supplies of food in the world does not automatically mean that everyone needing more food will have access to it.

The wealthier areas, where people already are comparatively well fed, show the biggest increases in food production. The underdeveloped areas, where hunger is most prevalent, are the slowest to expand production. Shortage of buying ability, plus trade restrictions, often keeps the abundance from flowing as readily to the areas of shortage as might be wished.

In forthcoming issues we expect to review this situation in more detail, including the expanded world food situation and U.S. prospects for agricultural exports.

Cover Photograph

Hit of the British Food Fair was the U.S. exhibit staged like an old-fashioned country fair. Visitors sampled fruit juices, doughnuts, and were even given a cookbook featuring U.S. food favorites. Other pictures, page 12.

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Editor:
Alice Fray Nelson

Associate Editor:
Ruth A. Oviatt

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Tropical Agriculture

COMPETITIVE OR COMPLEMENTARY?

By Quentin M. West
Far East Analysis Division
Foreign Agricultural Service

The awakening of the peoples in the tropical region of the world—their drive for political independence and a better economic life—seems destined to be one of the great developments of our time. This vast and diverse area, which rings the earth above and below the Equator, contains more than two-thirds of the world's land area and people. What these people can accomplish in economic and political development may be of top significance to world trade in the second half of the twentieth century. Especially important will be success or failure in the agricultural revolution that in most of the region is just beginning.

What will this agricultural revolution in the tropics mean to the United States? Are the products of the tropical countries competitive with ours, and will that competition grow? Or are they complementary to our own—products that we will always need to import? The answers to these questions may give some clues as to the future of the trade relationship between the United States and the tropical zone.

Competitive Aspects

Some products of the tropical zone compete directly with U.S. exports in European and Far Eastern markets—particularly cotton, tobacco, and rice.

The tropical area supplies about two-fifths of the world *cotton* market. Central America has almost doubled its cotton exports in the past 5 years, and exports from East Africa and India have also increased significantly. Meanwhile, the U.S. share of the cotton market, which was 34 percent in 1950-54, dropped to 18 percent by 1955, principally because U.S. prices were not competitive on world markets. When they did become competitive, in 1956-57, the U.S. share of world trade jumped up to almost 50 percent. In 1957-58 our share was still about 40 percent, though it probably will drop this year.

For the most part, cotton from the tropical zone competes in quality with U.S. cotton in foreign markets. But substitution among the general types of cotton is limited, and some cottons—such as the extra long staple from the Nile Basin and from Peru, the rough, harsh Tanguis variety from Peru, the short staples from India—are preferred for certain uses regardless of minor price discounts. We too import some of these cottons.

The U.S. share of the world *tobacco* market has fallen from 40 to 30 percent in the past 10 years. Two major contributors to this loss are India and the Federation of Rhodesia and Nyasaland, whose exports of flue-cured tobacco have more than doubled in the same decade and are competing in the European market. The United States is also meeting greater competition from the Federation and from Latin America in markets for burley, dark tobacco, and cigar tobacco. But despite this increased competition from the tobaccos of some tropical countries, markets for our tobacco in other countries of the area have been growing.

Although production of *rice* has increased greatly in the tropics since prewar, consumption has gone up faster, both in exporting and in importing countries. As a result, the tropical area actually has less than half as much rice to export as before the war, while its own import demand is much larger. This has opened up new markets in the region for U.S. rice. Thailand, Burma, and Italy have almost completely disposed of their rice surpluses during the past 2 years; the U.S. Government too has materially reduced its stocks. Thus the competitive aspects of the rice trade have changed markedly. World export supplies in 1958 may be somewhat less than potential import needs. However, since U.S. rice prices are above the world level, the volume of U.S.

Adapted from a paper presented at the joint meetings of the American Farm Economics Association and the Canadian Agricultural Economics Society in Winnipeg this summer.

COMPETITIVE CROPS

Above, mixing seed cotton, Sudan. Left, Thai farmers thresh rice by beating it over side of large basket. Bottom, Rhodesian farmer's wife helps sucker tobacco. All three products compete directly with U.S. exports in international markets.

exports will continue to depend largely on quality and prices of competing cereals, as well as on the foreign exchange situation.

Some other products of the tropical zone compete less directly with U.S. farm exports, or are supplementary to our production. *Fruits* fall into this category. Some citrus fruits from the tropics offer competition to our exports; but the principal fruit exports —bananas and pineapples—compete only in the sense that a banana may be eaten in place of an orange or an apple. And the United States itself is the major importer of bananas, practically all of which come from the tropical area of Latin America.

Also less directly competitive are some *vegetable oils.* Peanut oil and peanuts from Nigeria, French West Africa, and India, and cottonseed and cottonseed oil from the Sudan and other countries in Africa, compete with U.S. liquid edible oils in the world market. Exports have increased considerably in the past few years.

The most important tropical oils are of the palm group: Coconut oil, palm kernel oil, and palm oil. These hard oils make up more than 40 percent of the world's vegetable oil trade. The palm oils, including coconut oil, are now being used extensively in Europe for margarine manufacture, in combination with liquid oils. To some extent, therefore, they complement U.S. exports of soybean and cottonseed oils. But within certain limits they are also competitive, since variation in price differences leads to substitution of one for the other. Foreign countries have used these oils extensively in soap manufacture; but U.S. tallow, now available in large quantities at relatively low prices, has largely replaced them. The United States imports large quantities of these oils and of castor oil for industrial uses.

Nearly three-fourths of the U.S. *sugar* supply is produced in the tropical zone. Our own mainland cane and beet areas normally supply about 28 percent of the total; domestic offshore areas in the tropics—Puerto Rico, Hawaii, and the Virgin Islands—supply about 25 percent; and foreign countries, primarily Cuba and the Philippines, supply the other 47 percent.

Complementary Aspects

The great bulk of the agricultural exports from the tropical region is complementary to U.S. farm production. These exports are products whose very names suggest the tropics: Coffee, tea, cacao, rubber, jute, bananas, citronella oil, pepper, nutmeg. Such crops have a natural competitive advantage over the other crops in the tropical area because they can be grown nowhere else in the world. However, lower world prices for the tropical crops could mean a shift of land resources to crops that compete with temperate-zone agriculture.

One of the tropical products—coffee —has the greatest value of any farm commodity in world trade. It is also the most valuable U.S. import, even exceeding petroleum in 3 of the last 4 years. The annual value of U.S. coffee imports is almost $1.5 billion. The

U.S. coffee industry, including processing and distribution, ranks as a $2.5 billion business. Coffee has been the favorite U.S. beverage for nearly 200 years; today we in the United States drink over 125 billion cups a year. And the creaming of coffee alone accounts for 300 million gallons of dairy products a year at a value of close to one-third of a billion dollars.

Other complementary products are also important in our trade with the tropical zone. We take each year over $400 million of rubber, $150 million of cocoa beans, $70 million of bananas, $50 million of tea, and $30 million of spices.

Importance of Trade With Tropics

This trade of ours with the tropical region is growing fast. The value of our farm imports from the area is four times what it was before the war; and the tropics now furnish 76 percent of our total farm imports. The value of our farm exports to the area has increased even more strikingly, to a level almost 12 times that of 1935-39. And the tropics now take 22 percent of our total farm exports, as against 10 percent before the war.

Included in our imports from the tropics are our four largest farm imports: Coffee, sugar, rubber, and cocoa beans. Our most important farm exports to the area are wheat and wheat flour, rice, fats and oils, dairy products, cotton, and tobacco.

But this agricultural trade between the United States and the tropics is closely tied with nonagricultural trade; trade balances and dollar reserves cannot be considered for either segment alone. Looking at the total trade picture, therefore, we see that in 1956 over one-fourth of all U.S. exports went to the tropics and over two-fifths of U.S. imports came from there. Volume of trade was more than six times the prewar level. And our imports from the area were about a third of a billion dollars larger than our exports to it.

Outlook

To estimate the prospects for this trade relationship, we must look for a moment at the agricultural background of the tropical countries.

The tropical region has all types of agriculture — nomadic herding, shifting cultivation, intensive subsistence cropping, highly developed plantations. In most of the regions, farming techniques have remained almost un-

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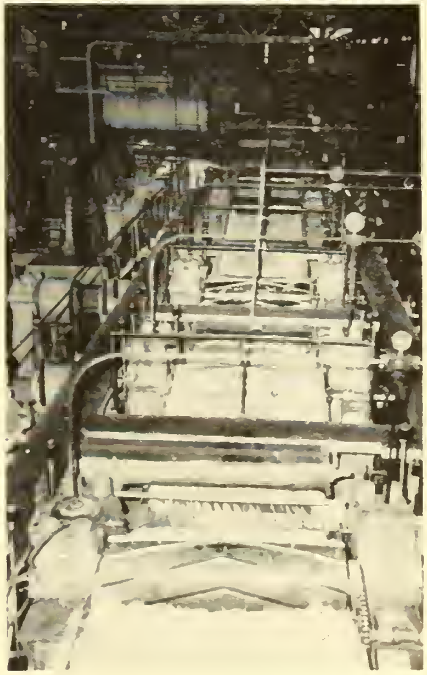
COMPLEMENTARY CROPS



Top, making crepe rubber, Malaya; also, picking coffee cherries in Costa Rica. Center, drying cacao in Ghana village. Bottom, rollers extract juice from sugarcane, Cuba. All four products are imported by the U.S. and are complementary to U.S. agriculture.

Agricultural Research in the Soviet Union

Photos by Herman A. Rodenhiser

Some idea of the vastness of Soviet farmlands is conveyed by this field of millet on a collective, Stavropol area.

Among the U.S. agricultural delegations to visit the Soviet Union last summer as a result of an agreement between the two countries was a group of agricultural crop specialists. Their chief interest, as they point out in this preliminary report, was to assess Soviet research in crop production and utilization.

As the U.S. agricultural crops delegation we visited the Soviet Union in the middle of the summer and during the course of our trip traveled about 7,000 miles. Starting in Moscow our route took us south to the Ukraine, then eastward to the Uzbek and Kazakh Republics, and finally to Krasnodar and the Stavropol districts and to western Siberia. Along this route we visited 28 agricultural research stations and a dozen or so collective and state farms, where we were able to observe the scientific work being done and the extent to which the findings were being put into practice. Everywhere, we were treated with the utmost courtesy and hospitality.

Agricultural production research in the Soviet Union is organized basically very much as it is in the United States, but with different terminology. The All-Union Academy of Agricultural Sciences under the Ministry of Agriculture corresponds roughly to our Agricultural Research Service in the Department of Agriculture. It administers research on broad problems or of significance to large geographic areas. Under it are some 38 institutes working on specific problems throughout the USSR, and each of these has a number of outlying branches or experiment stations. Utilization research, on the other hand, is not centralized in any one department within the Ministry of Agriculture.

In addition, each of the Republics has an academy of agricultural sciences, with a structure similar to that of the All-Union Academy, but quite independent of it. In these academies work is undertaken of local significance to the Republic; and often they cooperate with the All-Union Academy just as our State experiment stations work with USDA's Agricultural Research Service.

In general, the research institutes visited appeared adequately equipped for the work under way. All had ample available land for field experiments and abundant subprofessional-type help. However, the absence of greenhouse facilities for research was conspicuous. In plant breeding work all crossing and growing of plants was in the fields. When greenhouses are available, as they are in the United States, breeding and other programs are accelerated by growing two or more generations of the plant material a year.

Most of the Ministry of Agriculture research institutes and academies have chemical and biochemical laboratories. But these vary in different parts of the country. Often they are adequate for the work to be done; in several locations, however, more completely equipped laboratories would extend their usefulness.

Visit With Lysenko

One day was spent with Academician Lysenko, whose views on genetics and inheritance were "official" in the Soviet Union for several years prior to 1954. Briefly, Professor Lysenko rejects the conventional or classical viewpoint that inheritance is entirely a function of the chromosomes and genes and is not affected by environment. He holds that there is "no complete hereditary substance" in the living body, and that all parts of the body contribute to hereditary properties. Thus, the changes induced in the

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Members of the agricultural crops delegation included Herman A. Rodenhiser (group leader), John R. Magness, Carl O. Erlanson, and Ivan A. Wolff, Agricultural Research Service, U.S. Department of Agriculture; and Herbert H. Kramer, Agricultural Experiment Station, Purdue University.

plant or animal by changes in the environment or nutrition are inherited.

At Professor Lysenko's institute and at a number of other research stations throughout the Soviet Union, experiments were described to us that supported this thesis. Many Soviet geneticists accept his hypothesis, others do not. Much of the plant breeding work of the Soviet Union at the present time is based on conventional methods of hybridization and selection. It is also apparent that most of the breeding work followed these lines even during the time that Lysenko's hypothesis was regarded as the official Soviet position.

Crop Improvement

Most of the crop improvement work in the Soviet Union appears to be well conceived. Only a few examples can be given. Though the development of hybrid corn was only started in 1954 when North American inbred lines were imported, considerable progress has been made since then. Inbred lines carrying desirable genes, particularly those governing extreme earliness, are being developed; and the people in charge of the programs appear to understand the principles involved.

One of the outstanding improvement programs is with sunflowers, the principal vegetable oil crop in the USSR. Breeders at the All-Union Institute for Oil Crops in Krasnodar have developed varieties highly resistant to rust and reported that they have increased the oil content of the seed in some lines from around 27 percent to about 50 percent.

Similarly, good work appears to have been done in the breeding of sugar beets for high sugar and disease resistance. Tobacco is being bred for disease resistance and local adaptation; and in cotton breeding, work is being done on cytogenetics of interspecies crosses. Major emphasis in all these programs has been, and still is, conventional hybridization and selection.

Physiology and Nutrition

Work in physiology and nutrition appeared rather limited at the institutions visited. Some well-organized and replicated field plots involving various levels of N, P, and K were observed at the Sinelnekova Experiment Station at Dnepropetrovsk. Some interesting physiological studies on fiber development in cotton bolls and detailed studies of the effect of nutrition on boll development were being done at the Cotton Experiment Station at Tashkent. But, in general, the amount of this type of work was small.

Crop Pest Control

Work in pest control was also limited. DDT and benzine hexachloride are being used for insect control in orchards and vegetable fields. Bordeaux mixture and other copper fungicides are apparently the only materials being used for field control of diseases. Some mercurials were said to be used for seed treatment. Many grain fields were weedy. We were advised that the manufacturing capacity for 2, 4-D was about 5,000 tons, or only enough to treat about 5 percent of the small-grain acreage. Efforts are being made to increase this.

If original research is under way to develop pesticide materials, we saw no evidence of their being applied. It was stated that the Soviet Union is trying to formulate and manufacture pesticides that had been developed in other countries; and since the Soviet Union does not honor foreign patent rights, this could very well happen.

Certainly research work on plant pests seems to be much less developed than breeding programs. Potato fields were badly infected with viruses, evidence that there is no effective certified seed program. Nematodes are not recognized generally as plant pests. Rather high percentages of leaf rust were commonly observed on wheat, barley, and rye. However, we were told that progress is being made in the development of resistant varieties; the results of research in developing disease-resistant sunflowers have been outstanding.

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Women cleaning wheat seed on farm in the Ukraine. Below, grain terminal buiding, Omsk, holds 160,000 tons.

Another Look at Mexico

By **KATHRYN H. WYLIE** and **ANA M. GÓMEZ**[*]

Two summers ago Mrs. Wylie and Mrs. Gómez traveled in Mexico to survey and appraise the development of Mexican agriculture and the effect it was having on the U.S. farmer. This September they took another look at this question and reached the conclusions that follow.

Mexican breeders will use the U.S. breeding cattle (above) to improve their herds. In wheat output (below) Mexico is now self-sufficient.

MEXICO HAD a slight setback in its agricultural development last year because of the severe and extensive drought. Revenue from agriculture declined from the record level of 1956, agricultural exports dropped from the peaks of 1955 and 1956, and the value of farm imports was the highest in history. Yet, in spite of this, the value of farm exports was still more than twice the value of farm imports, contributing dollars and foreign currencies to purchase imports of needed goods. The total trade balance, however, was the most unfavorable in recent years.

Despite the 1957 setback, agricultural improvements have continued and the year 1958 promises to be a good one. The drought has broken and production is up. The only dark spots in the agricultural picture are the slow movement of cotton and the uncertainties of world coffee prices.

But Mexico's bright outlook may have a temporarily depressing effect on U.S. exports to that market. In calendar 1959, they will probably drop below 1957 and 1958 levels because of Mexico's increased supplies of corn, as well as greater domestic output of malt, eggs, baby chicks, and feedstuffs. Another effect may be to sharpen Mexican competition with the United States in world cotton markets.

On the other hand, the United States may have a larger share in Mexico's long-range outlook, which is optimistic even though inflation over the past 2 years has lifted the cost of living sharply and many people still find living hard.

Both industrial and agricultural output are expanding faster than population. Further, President-elect Adolfo López Mateos[1] has announced a policy of continuing and accelerating economic development. He has also expressed interest in the Southeast, where expanded output of commodities complementary to those in the United States could provide new sources of foreign exchange as well as new purchasing power for a higher standard of living.

All of these—the expected growth in per capita purchasing power, the stimulation of foreign exchange earning crops in the Southeast, and the rapidly rising population—may result in a need for more imports from the United States. There seems little reason to expect any radical shift from the conclusions of two summers ago, when we said that increased prosperity in Mexico would result in larger per capita consumption of many farm products. Expanded domestic output will probably continue to supply a major part of Mexico's food needs. Still there should be room for more agricultural trade.

As in the past, the United States should be able to share in this trade. The government's policy of restricting imports to protect and stimulate national industry, however, may continue to limit its full range. In any case, we can expect a continuing interchange of goods and services between the two countries that should be profitable to the agriculture of the United States.

Mexican unloads oranges from a cart at shipping point. Mexico had a record orange crop last year despite drought.

Irrigation and Flood Control

Irrigation and flood control are among major factors that will determine Mexico's future prosperity. Progress was made in 1957 and early 1958 in many of the programs for the benefit of long-run farm development. The area irrigated or improved during 1957, for example, is estimated at about 870,000 acres—the largest on record and a third larger than a year earlier. The most important areas benefited were the Grijalva Valley in the State of Tabasco, and the Colorado River Valley, which includes the northeastern part of Baja California and the northwestern corner of the State of Sonora.

The work in the Grijalva Valley consists mainly of flood control and drainage. The protected area expanded from about 99,000 acres in 1956 to some 331,000 in 1957. It is considered the richest agricultural district of the State. The State of Tabasco, as well as the entire southeast of Mexico, figures prominently in the agricultural programs presented by the President-elect, and all indications point to extensive agricultural development activity during the next administration.

The work carried out during the year in the Colorado River Valley irrigated about 25,000 additional acres and improved 240,000 more by drilling wells and completing a drainage system. Most of this area is planted to cotton and is expected to produce the largest cotton crop in the history of the district, this year.

Aids to Agriculture

The volume of credit granted by the banking system for crops and livestock use reached a new record in 1957. The total of these credits outstanding on December 31, 1957, was $291.5 million, 12 percent higher than at the end of 1956. Volume of credit was up 5 percent in 1957 over 1956, but this represented a slowdown in the rate of expansion compared with that of preceding years.

Crop insurance against all risks, started in 1955, expanded in 1957 to cover about 4 million acres and over 400,000 farmers. Losses were heavy and payments to insured farmers were higher than premiums collected. The deficit was paid by the Federal Government through the farmer-operated mutualista associations. A program to insure livestock began during the year with over 45,000 head insured, mostly in the State of Sonora.

The agricultural extension service and the research program of the Ministry of Agriculture continued during 1957. Planned expansion in extension personnel did not take place because of budget limitations, but reports indicate that the next administration will give this work increased attention.

Research is done principally by the Office of Special Studies and by the Institute of Agricultural Research. The Office of Special Studies started a barley improvement program in 1957 to develop higher-yielding varieties for both malting and feed. The Ministry hopes, through this program, to make the country self-sufficient in barley in the next few years. A research program on feeding and management of poultry and an experimental range management center were also begun.

The Ministry of Agriculture has expanded the program to develop the livestock industry by establishing artificial insemination and livestock-breeding centers, improving pastures, and importing breeding stock. There are now 34 insemination centers with 170 sires—about half are Holsteins and the rest are Brown Swiss, Ayrshire, Jersey, and Shorthorns. There are 9 breeding stations for cattle, 19 for hogs, 10 for sheep, and 1 for goats. In addition, there are 21 government poultry centers with a capacity, at the end of 1957, of 615,000 chicks per month. Production at these centers during 1957 was estimated at 4 million chicks, and 1958 output is expected to reach 5 million. Six more government poultry centers are scheduled for completion in 1958, bringing hatching capacity in government plants to 810,000 chicks a month.

Sorting potatoes (above); harvesting seed corn on experimental plot (below). Both crops were hard hit by drought in 1957 but recovered in 1958.

Mexico's total farm output was down somewhat in 1957 as a result of the severe drought in the summer months, particularly in the central and north-central districts. The sharpest drop was in the output of corn, the staple of the diet. Other declines occurred in beans, potatoes, limes, some deciduous fruits, melons, and watermelons. In spite of the drought, the country harvested record crops of wheat, tomatoes, oranges, sugarcane, coffee, and cacao, and the second largest cotton crop in history. Production of vegetable oils, lard, tallow, meats, and eggs was also the largest on record. Also, the expan-

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*Mrs. Wylie is Assistant Chief, Latin American Analysis Branch, FAS; Mrs. Gómez is Assistant Agricultural Attaché at the U.S. Embassy in Mexico City. Their previous stories appeared in *Foreign Agriculture*, November and December 1956, February 1957.

[1] The new President will take office December 1, 1958.

sion in the total hatching capacity of the poultry industry during the second half of the year was extraordinary.

As for 1958, water supplies were greatly improved, and the outlook is excellent for corn and bean crops. The wheat harvest was high and cotton production was above that of 1957. The winter vegetable crop was very good, and prospects for the sugar crop are also good. Rains in the cattle-range area in the north promise more cattle for slaughter.

Trade

Imports of corn reached record levels in 1957 because of the drought. Other leading imports were rubber, wool, cattle for breeding, poultry feed, hides and skins, tallow, essential oils, and tobacco leaf. These nine commodities represented three-fourths of the value of all agricultural imports. A good part of these come from the United States.

Mexico entered into an agreement with the United States in October 1957 to buy $28.2 million worth of yellow corn under Title I of Public Law 480. Purchases began in December 1957 and will total in the neighborhood of 29.5 million bushels. With the expected good corn crop harvested in 1958, imports of corn in the 1958-59 marketing year will be small, although imports in calendar 1958 have been somewhat larger than those in calendar 1957. Imports of corn were placed under permit from the Ministry of Economy in March 1958 and, except for government purchases, are allowed only under barter agreements.

The emergency imports of corn were a serious setback to Mexico's program for self-sufficiency in food products. Great progress was made, however, in other food products. For the first time in recent history, the only wheat imported was a small quantity through free ports. This is in marked contrast with the situation prevailing 5 years ago, when Mexico imported 16 million bushels of wheat—nearly half of its needs. Indications are for a larger acreage planted to wheat this fall because of greater supplies of water for irrigation and some shift from cotton to wheat in the northwest.

Higher domestic production resulted in a drop during 1957 in imports of

(Continued on page 14)

Revolutionary New Breeding Method Reported at World Poultry Congress

A new breeding technique that could have far-reaching economic effects on the world's poultry industry was announced at the 11th World's Poultry Congress in Mexico City in September. Delegates from Russia, Japan, and Switzerland reported that they have conducted successful laboratory experiments in which they have changed the inheritance of live birds through blood transfusions.

The Russian announcement was given in most detail and was explained in a talk titled "The Methods of Creating Breeds of Domestic Fowl in the USSR," by Prof. E.E. Penionzhkenivh of the All-Union Poultry Breeding Institute, Zagorsk.

Dr. A.W. Brant, head of poultry research for the United States Department of Agriculture, called the announcement a major contribution to basic research. "It will be revolutionary," he said, "if these preliminary experiments are confirmed and we can eventually change the inherited characteristics of poultry simply by adding blood from one bird to another while they are alive. This is the first time we have heard of changing inheritance without breeding in the sense of mating. In effect, it would mean that we could use a nongenetic method for making genetic changes."

Dr. Brant said that judging from the keen interest shown by the Congress delegates, the new technique would be explored in many laboratories throughout the world, including those of the United States Department of Agriculture.

The Congress was sponsored by the World's Poultry Science Association, an organization founded in 1912, in London. The Association is devoted to studying the scientific progress made in technical investigations in poultry industries. Association membership now is about 2,200 persons, from 61 countries.

U.S. participation in the meeting was extensive. Of the 132 technical papers presented, 43 were from the United States Department of Agriculture, land-grant colleges, and U.S. industrial laboratories. Of the 87 commercial exhibits shown in connection with the Congress, 55 were sponsored by the U.S. firms, or U.S. firms with Mexican subsidiaries.

Many U.S. exhibitors said they were highly pleased with the sales they had made at the Congress. W.G. Lodwick, U.S. agricultural attaché in Mexico, said that several manufacturers of poultry equipment told him that they had sold their products to customers in Mexico and other Latin American countries and in Europe. Others reported that foreign agencies had approached them about handling U.S. equipment and breeding stock abroad.

The United States Department of Agriculture sponsored an exhibit that showed the development of the U.S. poultry industry and the prominent place it holds in American agriculture. Congress visitors from 47 countries saw frozen, packaged samples of every type of commercial precooked and ready-to-cook poultry packed in the United States. USDA poultry production and marketing specialists and bilingual attendants were stationed throughout the exhibit and continually emphasized to the visitors the high quality, nutritive value, and convenience of the U.S. products, and that they are available for export anywhere in the world. Such exports help develop and expand consumer demand, and this in turn encourages local production.

Adjacent to the frozen display was a modern kitchen where Mary T. Swickard, USDA home economist, prepared appetizing, colorful poultry dishes from recipes derived from many countries. These foods were sampled by visitors.

H.H. Alp, director of market development for the American Farm Bureau Federation, Chicago, was elected president of the World's Poultry Science Association for the next four years, succeeding Dr. Rupert Coles of Great Britain. He is the second president elected from the United States.

Attentive Mexicans watch Mary T. Swickard, USDA home economist, prepare an appetizing dish with U.S. chicken. Practically every type of U.S. ready-to-cook poultry was displayed at the U.S. exhibit.

U.S. Poultry Attracts Crowds At World Congress

Visitor learns about U.S. poultry breeding program from USDA consultants. Below, housewives view the brand names of U.S. poultry processors, of which 55 firms exhibited.

U.S. technical consultants explain through interpreter how U.S. poultry is packaged and frozen. Below, Mexican girl shows her delight in newly hatched chick from incubator.

THE U.S. MAKES BID For British Food Market AT LONDON FAIR

Ambassador John Hay Whitney takes a look at the U.S. tobacco exhibit, which featured a recorded chant of the traditional tobacco auctioneer. Below, London housewives are intrigued by the many kinds of U.S. poultry products that are available in frozen form.

Crowds lined up for doughnuts made of U.S. wheat flour and egg yolk solids and fried in U.S. lard. Above, Mrs. John F. Keegan of Bedfordshire received the 100,000th doughnut given away and thereby won a basket of American food for her family.

U.S. Congressmen John C. Watts and W. Pat Jennings compare apples at fruit display. Below, young Kathryn Shepherd of Lancashire grins as she wins basket of fruit.

British consumers, who must import half their food, found themselves showered with attention by many nations, including the United States, at the British Food Fair, London, which ended on September 11. Free World and Communist nations alike were represented in the displays, calculated to catch the eyes of those who buy.

The U.S. exhibit, attended by 300,000 British visitors, took the form of a big country fair, with things to see and things to sample. It proved an attractive showcase for such American farm products as wheat, rice, fruits, lard, poultry, and dried egg solids.

Three things were accomplished. U.S. foods were advertised to the British public. The fair was an effective meeting place for British and U.S. food trade representatives. And it helped to build good will not only toward U.S. agricultural products but the U.S. in general.

There was only one problem. Visitors wanted to know where they could buy the foods exhibited. Britain's dollar shortage has limited U.S. food imports; however, some relaxation of these restrictions appears to be on the way.

Left, London rice importer Alexander G. Costa chats with U.S. Agricultural Attaché Robert N. Anderson. Below, new method of cooking rice is explained to British visitor.

A Look at Mexico

(Continued from page 10)

eggs, baby chicks, and malt. Imports of fresh eggs, which amounted to $5.7 million in 1954, declined to less than $1 million in 1957. A beginning is being made in dehydrating eggs to eliminate imports of dried eggs, which in 1957 amounted to about $264,000. Imports of baby chicks are now limited to breeding stock.

Malt imports are expected to become unnecessary by the end of 1958 because of a growing domestic industry. Imports of poultry feed, which reached a record level in 1957, are likely to decline in 1958 because of larger capacity in Mexico's feed industry.

Leading farm exports in 1957 were cotton, coffee, cattle, sugar, molasses, melons, peanuts, tomatoes, and vegetable wax. These 10 commodities represented 88 percent of the value of farm exports and 39 percent of all exports. There was a decline in both the quantity and average price of cotton shipments. And declines took place in peanuts, cottonseed cake and meal, chickpeas, and chilies. On the other hand, there were significant increases in the value of exports of coffee, cattle, sugar and molasses, cacao, henequen, beef, and melons.

So far in the 1958-59 marketing year, sales of cotton have been slow and farmers are pressing the government to reduce the cotton export tax.

Although coffee supplies will probably be good, revenues from coffee exports may suffer because of lowered world prices. In an attempt to stabilize the price of coffee, an agreement was signed in Mexico City in October 1957 by representatives of the coffee producers in Mexico and six other coffee-producing countries, under which the countries agreed to limit their export shipments. A new agreement covering an additional year was signed this September by 15 countries, again limiting the quantity of coffee offered for export. Whether or not this cooperative effort will result in strengthening prices remains to be seen.

Sales of winter vegetables to the United States this year were higher than last, and exports of fruits—melons, watermelons, pineapples, oranges, and strawberries—continued high.

Wet Weather Reduces Yield and Quality of Europe's Wheat Crop

Western Europe's early-season prospects for a bumper 1958 wheat crop have not been realized. Wet weather held up harvesting in late August and September, and this delay was especially serious since a late spring had made the season 2 to 3 weeks later than usual. As a result, production may be about 5 percent less than the record crop of 1,368 million bushels last year.

France, the United Kingdom, and Ireland are the most affected. In these countries, continued rain at harvesttime caused extensive lodging and shattering. Also, much of the grain sprouted before it was brought from the field; and a general lowering of quality was reported, especially in France, where much of the crop—possibly half—is below milling standards.

This lowering of quality will undoubtedly change the trade picture. France will import a sizable quantity of high-quality wheat to fill 1958-59 requirements. At the same time, it will export low-grade wheat for feed, so that the country will still be on a net export basis. Some of the other European countries will also need larger wheat imports, but feed grain imports will probably be reduced by the availability of wheat for feeding.

In the United Kingdom, excessive rains made the harvest season the most difficult one that farmers have had to cope with for many years. Output is still estimated to be larger than any recent harvest, but here too low-quality grain will be a problem. Import requirements are expected to be larger.

In Ireland, the heavy rains continued through September, the fifth successive month of much-above-average rainfall. Harvesting was delayed, only 20 percent of the wheat was harvested by late September, and of that, only about 25 percent was classed as suitable for milling. With yields sharply down from the large 1957 harvest, import requirements are expected to amount to over 9 million bushels, compared with net imports of about 3 million bushels a year ago. However, feeding of low-quality wheat could reduce import requirements for coarse grains.

On the Continent, Western Germany, Austria, and Switzerland fared better. The delayed harvest did not reduce yields in Western Germany, nor was the quality seriously affected. No losses were reported for either Austria or Switzerland, and in the latter, quality is reportedly excellent.

Conditions were spotty in Scandinavia. Sweden had good weather at harvest time, while Denmark had bad weather throughout, with some losses. Though yields were reduced in Denmark, total production was about the same as last year since acreage was considerably higher.

Both Italy and Greece had good conditions and bumper crops. Above-average wheat crops were also harvested in Spain and Portugal, though not as large as in 1957. Belgium's wheat crop is larger than last year because of increased acreage.

Grain production levels in Western Europe are important in determining probable demand for U.S. wheat, since this is traditionally the leading U.S. wheat market. With so much low-quality grain in a number of countries, requirements this year will probably be for more higher-grade wheats to bring the grist up to standards for breadmaking.

Competition for this quality wheat market will be strong. Canada's crop, though small, is of a very high quality. The Soviet Union's large crop is also likely to provide a sizable amount for export. At the beginning of 1959 Australia will have larger supplies, as the harvest is expected to be about double the poor crop of last year. Argentina's crop is also expected to show some increase over 1957.

But Western Europe's low-grade wheat may have serious effect on U.S. feed grain exports. Not only will this low quality wheat be diverted to feeding, but surpluses from the countries affected will compete with U.S. feed grains in European markets.

Land Fragmentation

No. 1 Problem for West German Agriculture

By PAUL A. HESS and PHIL S. ECKERT
U.S. Agricultural Attaché Office, Bonn, Germany

Photos by Phil S. Eckert

WERE YOU TO VISIT Germany, you would enjoy the wonderful, varied countryside, the neat well-kept fields, and the little villages with their spired churches and narrow lanes. And you might wonder what it is like to be a farmer in Germany.

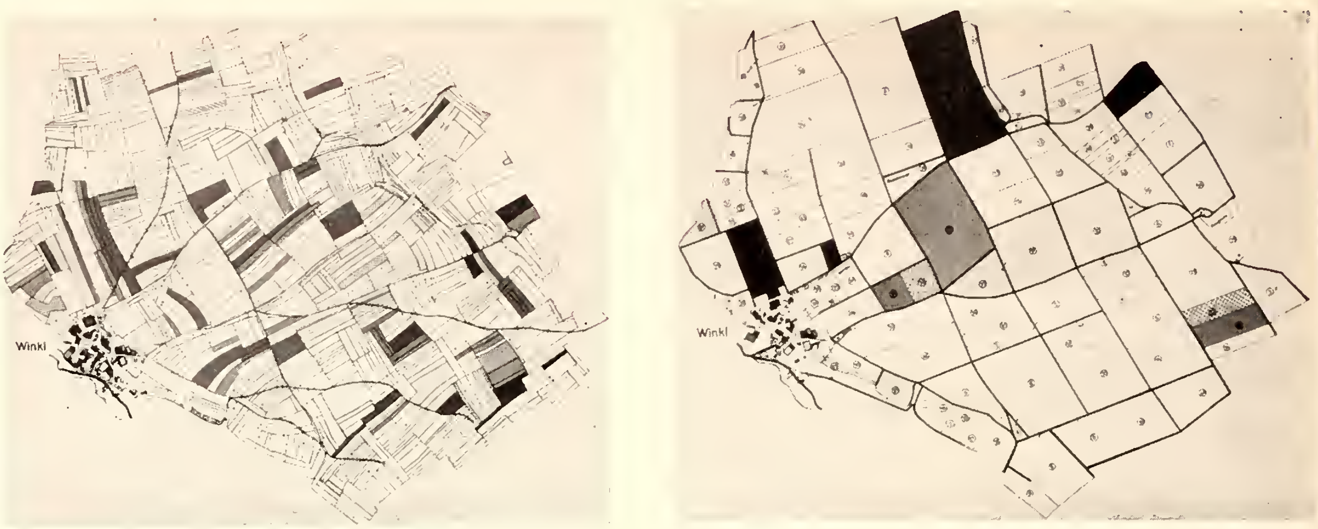
If you were, you would probably own some 17 acres of farmland—the average size of the 2 million farms in West Germany—and you would live and work in one of those small villages day in and day out. If your farm were divided like most farms, you would have your land in 10 to 11 plots. Your farm might even be divided into more than 100 plots strewn all over the village area—there are some 8,000 of these in Germany. Or, as an extreme case, your land might consist of as many as 200 tiny fields, so that you would spend fully one-third of your working time just traveling from field to field.

You might have to cover, as some farmers do, as much as 300 miles just for one farm operation, such as fertilizer distribution. This traveling would not be with a tractor but with a slow-moving team of oxen. Also, some of your fields would be so small that a tractor could hardly turn around in them. In fact, in some communities land fragmentation forces farmers to plant all the same crops, simply because so many fields cannot be worked without driving over neighbors' land.

Nor would that be the end of your problems. You could not drain or irrigate a specific field if you wanted to. You would not have the space to put your implements under shelter. Your livestock—cows, hogs, and a few hens—would be crammed in a dark narrow hole, and your grain would be stacked in the open because you inherited only one-eighth of the grain barn.

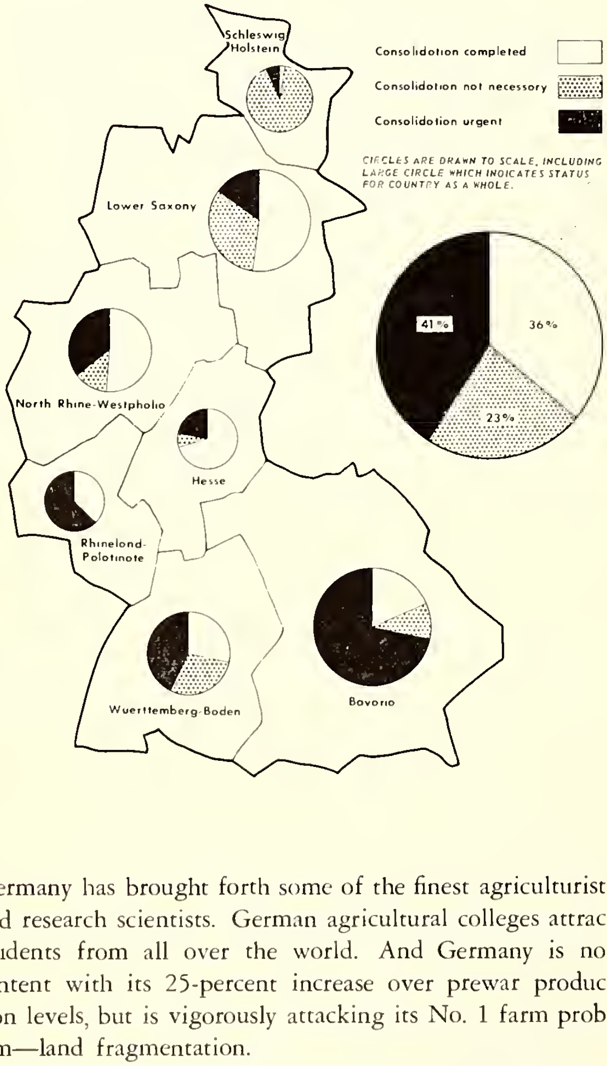
And yet, despite these difficult conditions, Germany produces record crops. Yields in Germany are high among the leading European countries and higher than in the United States for some crops. German breeds of livestock have improved livestock production in many parts of the world.

Resettlement of German farm families would move them from crowded villages to consolidated farms, such as this one. Below, German farmer talks with Phil Eckert.



Map at left shows much-divided farmland near Bavarian village of Winkel. Right, same area after consolidation.

Status of Land Consolidation in West Germany, 1958



Germany has brought forth some of the finest agriculturists and research scientists. German agricultural colleges attract students from all over the world. And Germany is not content with its 25-percent increase over prewar production levels, but is vigorously attacking its No. 1 farm problem—land fragmentation.

Fortunately, things are not so bad in all areas of the country as has been indicated here, for if this were so, even the Germans would probably give up. The intensity of the land fragmentation problem increases from north to south. In Schleswig-Holstein, on the Danish border, 6 percent of the agricultural area is in need of land consolidation; in Bavaria, which lies in the southwest bordering Austria and Switzerland, 72 percent. Of the 35 million acres of agriculturally used land in West Germany, about 40 percent requires consolidation plus such other necessary measures as road construction, drainage, leveling, outsettlement from overcrowded villages, and enlargement of small farms.

How did Germany's farmland split up in this way, with all the undesirable consequences? The answer is hereditary division of ownership among the numerous children, generation after generation. True, there were some other factors—the peculiarities of settlement in early medieval times, the need to seek protection in defendable villages, the topography. But the chief reason was, and still is, the splitting-up of land each time a new generation takes over.

With farm efficiency improving in many parts of the world as the result of mechanization, Germany's fragmented areas become an increasing burden. That mechanization cries loudly for land consolidation is indicated by the fact that there are more tractors per area of farmland in Germany than in the United States. Because of these conditions and the decline in the availability of farm labor, the need to consolidate is probably more urgent today than at any other time in history.

Efforts to consolidate, however, are not limited to the relatively recent period of farm mechanization. As early as the fifteenth century, farmers in the Allgau region along the Austrian border recognized the need and started working together to unite their holdings. Also, through the years local and state improvement measures have provided a monumental attack on this great problem. But it has not been easy. Thousands of individual cases involving economic, social, political, and personal consideration have had to be solved. The disposition of a shade tree may sometimes delay a community consolidation effort for weeks or months.

(Continued on page 22)

Research in Soviet Russia

(Continued from page 7)

The Soviet Union still has many problems of underproduction in the major food and fiber crops. So, since surplus production is not a factor, Russia is little concerned with the diversification of agricultural production except in relation to major crops. Thus, it has not developed research programs, to any appreciable extent, which look forward to the substitution of entirely new crops or the finding of new uses for its present crops.

New Crops and Utilization

Considerable literature has emanated from the USSR in past years on the potentials of agricultural development of various economic plants. As we traveled throughout the country we watched for new crop material with potential for the United States. But we saw nothing, either in production or in experimental plots. It is to be presumed, therefore, that Soviet findings at the present time are largely of an academic nature.

We also made special inquiry as to the type of utilization research in progress. We found that most of the work was being done by institutes under the Academy of Science rather than under the Ministry of Agriculture. For example, a study is being made of the use of cotton and tobacco leaves as a source of citric acids. Wild plants were being investigated as sources of medicinals, industrial and essential oils, and resins.

Application of Research

Most of the collective and state farms, we noted, are quick to utilize new varieties produced in breeding that are superior. These are disseminated rapidly and put into commercial use. But other types of research seem to go into use more slowly. The group heard comments that often the best fertilizer practices are not followed and that fertilizers are poorly utilized on the farms. Inadequate weed control in grain fields is probably not the fault of the farm management since effective herbicides are not available in sufficient quantity to treat many fields.

We were informed that the crop production research programs in the USSR were supported in amounts approximately comparable to similar research programs in the United States. Perhaps the outstanding progress has been in plant breeding, particularly with annual crop plants. Pesticide research, and particularly the manufacture of pesticide materials, is in need of much greater development. Some crops, such as beans and sorghums, that would appear well adapted to the Soviet Union are not being grown to an appreciable extent. Yet the group felt that agricultural leaders in the Soviet Union realize where their programs need strengthening and are moving in that direction.

Commonwealth Seeks To Broaden Its Trade With Rest of World

At the end of the Commonwealth Trade and Economic Conference, held in Montreal September 15-16, 1958, press comments indicated a new direction in Commonwealth thinking. The Conference recognized the strength of the bonds that tie Commonwealth countries together to their mutual benefit. But it stressed, too, the wide diversity of their economic interests and the increasing strength of their non-Commonwealth economic ties.

Said the *Montreal Gazette* of the final communique: "The communique asserted the delegates' recognition that the Commonwealth cannot stand alone as a trading entity, that it must have the support and co-operation of other trading nations, particularly the United States and Russia."

Perhaps of most direct interest to U.S. agriculture are the parts of the communique that deal with commodity problems. The Conference agreed that care is needed in disposing of surpluses in world markets on noncommercial terms, to guard the interests of traditional suppliers. It urged countries holding commodity stockpiles to consult fully with countries that might be affected by disposal. But it agreed that noncommercial disposal can help improve living standards in less developed countries.

All the Commonwealth countries felt concern about high farm price supports and restrictive farm trade practices. They recognized certain obligations to their producers. But they agreed on the need of limiting and progressively reducing the level of protection they give to basic farm products and minerals, wherever that protection tends to discourage domestic use or make difficulties for low-cost production elsewhere.

Economic development received much attention at the Conference. As the final communique put it: "We cannot be indifferent to the poverty in some Commonwealth countries. The concern we feel is based fundamentally on common humanity but it is supported as well by the knowledge that the economic development of Commonwealth countries would be of material benefit to us all."

Along these lines, the Conference welcomed President Eisenhower's proposal on expanding the resources of the International Monetary Fund and the International Bank. Canada unfolded a "dollars-and-food" plan for aid and development. This would involve paying $150 million in gold and demand bonds to the Fund and pledging another $325 million to the Bank, provided plans to expand these resources were approved at New Delhi.

Other points included increasing its Colombo Plan capital aid for South and Southeast Asia from $35 million to $50 million over the next 3 years; continuing its shipments of food—mostly wheat—under grants and loans to India, Pakistan, and Ceylon; setting up a Colombo-type aid program for Ghana and other Commonwealth countries in Africa; and continuing its contributions to technical assistance programs of the Colombo Plan and the United Nations.

Underscoring the Commonwealth's vital interest in the orderly handling of its economic problems, a new organization arose from the Montreal Conference. Named the Commonwealth Economic Consultative Council, it will coordinate and carry on present arrangements for economic consultation.

INDIA'S ECONOMIC CRISIS

By GERALD W. SHELDEN

Far East Analysis Branch
Foreign Agricultural Service

GRADUAL REDUCTION of India's foreign exchange reserves at a rate of almost $10 million a week for the last few months has caused serious concern, not only in India but in many other countries of the world. Reserves on September 1, 1958, stood at a level sufficient for only 3 months' supply of imports. This is a dangerously low amount for a country that relies on foreign trade as heavily as India does. In 1957 India imported over $2 billion worth of commodities. But if India is to continue to purchase abroad, it must in some way obtain the foreign exchange to pay for its purchases.

This shortage of foreign exchange had its beginnings, at least in part, in 1947 when British India was partitioned into the two countries of India and Pakistan. Many of the normal marketing channels and production facilities were disrupted; and India began to feel the strain on its economy. Many of its export items were no longer available within its own boundaries, and raw materials formerly produced domestically had to be imported.

To overcome these difficulties and to give its economy an industrial base, India embarked on a series of 5-year plans. The first plan had as its major goal expanded agricultural production. More food was to be made available for domestic consumption. Industry was to be supplied with agricultural raw materials, and more agricultural commodities were to be exported. Favorable growing weather prevailed during the plan's period so that it proved to be a success agriculturally. Some of the increased production, however, represented the recovery from the low levels following World War II.

In 1956 India phased into its second 5-year plan, which had as its goal industrial development, with major emphasis on the basic industries. The original plan called for an investment of $10 billion in government-owned projects, i.e., irrigation, power, industry, mining, transportation, communications, agriculture, and social services. Private investment was estimated at around $5 billion.

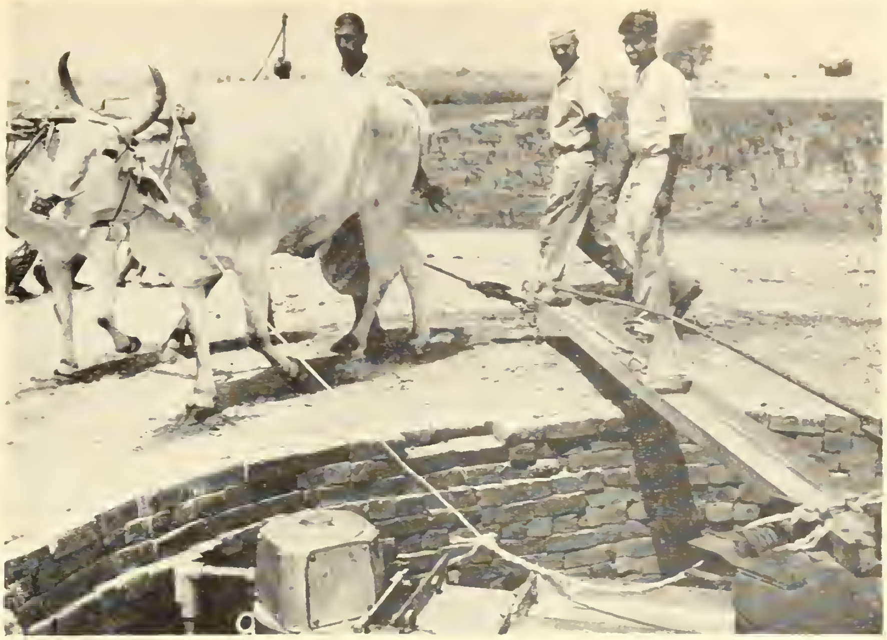
Shortage of foreign exchange forced India to modify its second plan. The program now calls for investment in such basic industries as steel, transportation, communications, mining, and power; and this involves the importation of large quantities of capital goods. These are costly. They have made excessive demands on India's foreign exchange balance and entailed deficit financing. At the same time, India's growing population has consumed much of the increased production that might otherwise be exported, and those agricultural commodities and textiles that were exported faced falling world prices.

Thus the foreign exchange shortage has been caused by an increase in value of the imports required by the ambitious development plans combined with a decrease in value of exports. And this has necessitated a virtual ban on imports of consumer goods in order to save foreign exchange. Furthermore, India experienced a decline in foodgrain production in the 1957-58 crop year because of drought. The harvest was down 10 percent, or 6.7 million tons from the previous year. India will have to find some means of obtaining more foodstuffs from foreign countries than it normally would, thereby creating even more strain on the country's reserves.

At the end of August, the International Bank for Reconstruction and Development, or the World Bank, as it is commonly called, met with India's major trading partners — the United States, the United Kingdom, West Germany, Canada, and Japan. India's foreign exchange difficulties were analyzed, and it was agreed to provide $350 million of new credits to India by March 1959 to pay the most pressing bills falling due during this period. It was also indicated that these countries would try to provide $600 million more by March 1961.

The United States offered to defer until 1967 annual payments on the 1951 wheat loan to India. Also, the United States proposed that a new Public Law 480 agreement of approximately $200 million in food grains be made this year to help India overcome its deficit food situation. On September 26, this agreement was signed.

Unfortunately, India's financial troubles will not be wholly solved by this arrangement of foreign credits. The problems are likely to continue—for how long, no one knows. Yet if the basic industrialization phases of the Second Five Year Plan are successful, India will have progressed to a point where it will be easier to maintain its economic development at a rate sufficient to increase per capita income.



Operation Bullock Power, tried out in Indian village, uses animals to drive a high-speed generator. This ingenious mechanism produces constant voltage although bullock speed may be uneven.

Photos courtesy Ford Foundation

India Tries Harnessing Bullock Power

to generate electricity for its rural villages

Not all aid to India is on a government-to-government level, nor is it all in terms of million-dollar loans. Organizations, industries, and even individuals, challenged by India's need, are engaged in small-scale programs to better the living conditions of the country's vast rural population.

Latest development is bullock-powered electricity. Most of the time bullocks lead an idle life in India, roaming all over village streets. But by harnessing a pair to a specially designed generator, enough electric power is produced to provide light for 150 village huts or to operate a small village industry employing from 25 to 50 men. A pump unit, which also uses bullock power, gushes 150 gallons of water a minute, enough to irrigate 100 village acres.

The bullock-power generator, which may revolutionize India's slow-moving, finance-hampered rural electrification program, is the work of Leigh S. Stevens, a U.S. management consultant, who was assisted by the Ford Foundation. When it was tried out in the small village of Khanpur last summer, Prime Minister Jawaharlal Nehru was on hand to see it work. Excitement ran high as the plodding bullocks moved a simple driving mechanism which converted their power into the high rotary speed needed to drive a generator.

But as Mr. Nehru told the assembled villagers, this was not magic; it was the result of hard work by men who wanted to help India. And he added that it was work like this and not necessarily the huge projects that could do the most for rural India.

Prime Minister Nehru watches water flow from a pump unit, also operated by bullocks, at 150 gallons a minute.

This drill press can be run on bullock power, with storage batteries carrying on work when animals rest.

Selling U.S. DAIRY CATTLE in Latin America

By FREDERICK M. LEGE, III
Dairy and Poultry Division
Foreign Agricultural Service

A SIX-WEEK swing around Latin America this past summer convinced me that the United States has some excellent markets—both present and future—for its dairy cattle. It also showed that there is work to be done in developing these markets.

This survey took me to eight countries — Brazil, Chile, Peru, Ecuador, Colombia, Honduras, Guatemala, and Mexico. Dr. Joseph C. Knott, Professor of Dairy Husbandry at Washington State College, came along as consultant.

Why We Went

Everywhere, we explained that our purpose was to demonstrate our country's intention of cooperating with the dairy industries of Latin America and aiding in their development. Such an approach can be of great immediate service to both the U.S. exporter of purebred dairy cattle and the Latin American importer. It will also benefit the Latin American consumer and the agencies dedicated to improving the quantity and quality of the milk he uses. And it will eventually help strengthen the general economy of each country, thus making it an even better market for U.S. dairy cattle.

But because Latin America is already a good market for U.S. cattle, a big part of our job was to see how our animals and their offspring are performing in their new homes. We wanted a frank exchange with Latin importers —their complaints as well as their praise. This was hard to get in some places. Latin people are inherently so courteous that they won't tell you their criticisms unless you show a sincere interest in learning the bad as well as the good points of your cattle. But we were able to put our point across and to come home with what we think is a fairly well-rounded picture.

Another big part of our job was to put would-be importers in contact with U.S. breed associations who can supply them with pictures, pedigrees, and prices. We also tried to help coordinate the U.S. visits of some buyers whose plans we knew, so that they could make the contacts they wanted.

Mexico's dairy industry is flourishing. Left, the great young cow, "Margarita," of U.S. descent; right, washroom of well-equipped and modern milking parlor.

What We Learned

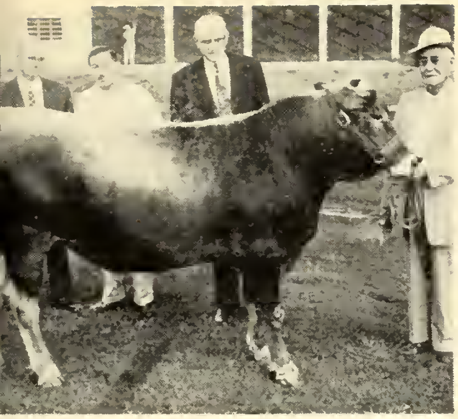
Here are some of the broad conclusions we reached as a result of our trip. These would hold good for all the countries visited, though in varying degree.

U.S. dairy cattle are well liked in Latin America. They have a reputation for high milk production maintained during a long life. *But* to keep up that reputation we should send the Latin American countries only animals that are better than their best. Every one should be a real herd improver. From us, the Latin breeders don't want grade or trading-quality cattle; they can get those cheaper from their nearer neighbors.

Some countries have set up minimum classification and production standards for animals imported. U.S. breeders should make sure that the cattle they ship meet every such standard with room to spare. This will help build confidence in U.S. animals among new importers, as well as keeping the friends we already have.

Our main competitors for Latin American markets are the Netherlands, West Germany, Canada, Argentina, and Cuba. *European* cattle have a good reputation for sturdiness, but sales have fallen off in recent years. *Canadian* cattle are strong rivals in quality. Canada is doing very well with its cattle in Brazil and Mexico, and particularly well in Ecuador, where Canadian-bred animals took every championship except Champion Bull at last year's Quito Fair. Their reputation is high too in Colombia; there Canada has a full-time representative for its Holstein breeders, ready for the day when import restrictions are removed.

Argentine cattle are way ahead in price. Argentina's main strong point is in highly bred grade animals. In Peru it has a 50-percent price advantage, and this, with the possibility of trade concessions, gives Argentine animals an edge in this market. In Chile, Argentina can sell cattle the equal of our better "grade" animals at a lower price than the U.S. animal will bring



Photos by Frederick M. Lege III

Three Latin American dairy champions, each has one or more U.S. ancestors. Left, Grand Champion Brown Swiss bull, Guatemala; center, champion granddaughter of famous cow family, Colombia; right, National Production Champion, Peru.

at home as meat. *Cuban* cattle compete with ours mainly in Honduras, through the attractive long-term loans Honduran cattlemen are able to get from cattlemen in Cuba.

A major problem to Latin American dairymen is the fact that milk is still somewhat of a luxury item in most of their countries. A man earning the minimum wage would have to spend at least an hour's pay—in some countries two—for a quart of milk. (In the United States, he could buy at least 3 quarts of milk with his hour's work.) These high retail prices are holding down consumption.

In these circumstances, one might wonder why dairymen expand and improve their herds. The answer is a long-term one. A dairy industry that does expand and improve its herds is cutting its production costs as milk output goes up per cow. At the same time, over the long pull, economic development programs will raise per capita income to the point where more people can afford more milk. This accounts for Latin American eagerness to get seed stock, not just herd replacements, from U.S. breeders.

We found widespread misunderstanding as to the purpose of U.S. nonfat dry milk exports to Latin America. We pointed out that these sales are intended not as competition to fluid milk, but as market builders, to broaden a demand that is still in the future. The low-income Latin American consumers can't afford fluid milk today, but he and his children are learning about milk's advantages through using reconstituted nonfat dry milk and products made from it. Later, as income goes up and milk prices go down, the two will meet, and the long effort of Latin American dairy cattle breeders will pay off in sales of fluid milk.

Prospects

Where does the U.S. breeder enter this picture? What are his prospects for keeping or enlarging his Latin American markets for dairy cattle?

In Brazil, the depreciation of the cruzeiro makes import prices very high; only the well-to-do breeder who does not need a day-to-day profit can afford to import U.S. cattle. But a few big registered breeders will continue to buy U.S. animals, and cooperatives may be interested in a few good bulls to improve the herds of their members. This applies too in Chile and Peru.

In Chile, both immediate and long-term prospects are very good. The joint Chilean-U.S. agricultural agency DTICA plans to set up a demonstration herd of U.S. or U.S.-bred animals. This would not offer commercial competition to Chilean importers of U.S. cattle; so Chilean breeders are willing to import at least 50 head of breeding animals in the next 12 months and possibly also for the next 5 years.

In Peru, market possibilities are excellent. The joint U.S.-Peruvian agriculture services plan to set up two demonstration herds of Brown Swiss. Despite the devaluation of the sol, there are good chances of selling from 150 to 200 head of top-quality dairy cattle (all breeds) in the next year.

Above, irrigation water flows through to clean a feeding station on Peruvian dairy farm. Below, Peruvian bulls being walked on electric merry-go-round.

In Ecuador, there is a small market for seed stock now; it could be larger if credit could be arranged. However, along with fairly numerous expressions of interest, we got some frank complaints about the quality of previous imports. At one hacienda we could plainly see why the reputation of U.S. cattle varies. Among 58 cows, all but one of the outstanding animals in volume of milk and in type were U.S.-bred—but so were the three worst.

In Colombia, imports are still restricted to save foreign exchange. But some breeders are interested in further shipments of U.S. dairy cattle on a "Tourists for Cows" basis. When import restrictions can be relaxed, Colombia could be a big U.S. market again—providing our breeders have kept in touch.

In Honduras, there are good possibilities, owing to a proposed loan that would finance imports of dairy cattle and other livestock over a 3-year period. Plans of the U.S.-Honduran joint agricultural agency call for two ways of importing: One, direct imports to form a permanent herd whose offspring will be sold to Honduran farmers; the other, direct imports by farmers, these animals to be acclimated in quarantine for the best possible adjustment.

In Guatemala, there will be a continued demand for small numbers of purebred dairy animals. But credit requirements are stiff.

In Mexico, the best market in the world for U.S. dairy cattle, prospects are fine. Two Export-Import Bank loans have helped push U.S. shipments to a level four times that of previous years. At the same time, they have stimulated privately financed imports.

But even in Mexico—as with all our Latin American markets—public relations work must go on all the time. U.S. breed associations can perform a valuable service by keeping in close touch with Latin buyers—before, during, and after a sale. And every individual U.S. breeder or broker who selects top animals for sale to Latin America and then watches over their development can help maintain the good name of the U.S. cattle industry.

Venezuela and Ecuador Trade Petroleum and Rice

Venezuela and Ecuador have completed a reciprocal trade agreement through the Agricultural and Livestock Bank of Venezuela. Under the pact, Venezuela has bought 32,000 metric tons of Ecuadoran rice at $100 a ton. In return, the Agricultural Development Bank of Ecuador has opened a credit to buy an equivalent value of Venezuelan petroleum.

Tropical Agriculture

(Continued from page 5)

changed for more than 2,000 years. Grain is still harvested by the sickle and threshed under the hoofs of animals; the land is still plowed by oxen and wooden plows, and some is only scratched with a stick by hand before sowing.

For the United States and most European countries, the agricultural revolution began before the 19th century. But for much of the tropical area, that revolution is just now getting under way. Its success is basic to the economic development plans on which many of the countries have embarked.

An important part of these plans has been to increase earnings of foreign exchange for further development needs. This increase was to be gained largely by increasing agricultural production—both to sell abroad and to reduce the need of imports for domestic use.

Several of the countries have begun ambitious programs for increasing farm output, including expansion of irrigation, increased use of fertilizers and insecticides, use of improved seeds, and mechanization. They have had some success. In 20 years, rubber production has risen more than 90 percent, rice, 40, and cotton and cacao almost a fourth. Tobacco and coffee production have also increased significantly.

One would think that this expanded production might hamper U.S. agricultural trade by increasing competition and reducing foreign markets. However, experience has proved otherwise. In most of these countries, some improvement in health, education, and income levels has meant such a rise in population and per capita consumption that total consumption has outstripped the increase in productivity. Thus, much of the greater output that was designated for export has to be used at home; imports for consumption go up instead of down. This means that U.S. trade with these areas has actually expanded because of their development programs.

But imports that exceed planned levels and exports that fall below them lead to serious troubles with foreign exchange. Public Law 480, authorizing the sale of surplus U.S. farm products abroad for foreign currencies, has come opportunely for many of the tropical countries. It has helped them buy the extra requirement of food and fiber that they could not otherwise finance, and it has released foreign exchange for imports of the goods they need in economic development.

Since the beginning of this U.S. program in 1954, 38 percent of all sales of U.S. commodities under Title I of P.L. 480 for foreign currency has gone to tropical countries. These sales can continue to be an important development factor by aiding dollar-short countries to bridge the gap between domestic demand and foreign supply.

Land Fragmentation

(Continued from page 16)

Realization of the pent-up need for an attack on a national scale—Marshall Plan funds gave the movement a tremendous impetus—led ultimately to the Federal Land Consolidation Law of 1953. Under this law, legally constituted authorities can order consolidation in a community if it is considered to be in the interest of the farmers. But very little compulsion has been required, in view of the vast backlog of community requests for this step.

The procedures established by the law are complicated, so that even now it is not unusual for a community project to take several years for completion. Yet considerable progress has been made, as is evident from the following table listing the yearly acreages of land consolidated:

	Acres		*Acres*
1945-48 ..	197,739	1953	395,750
1949	181,932	1954	448,697
1950	264,542	1955	482,174
1951	324,986	1956	494,254
1952	392,914	Total	3,182,989

At the current rate of progress, i.e., nearly a half million acres a year, about 30 years will be required to complete the program. However, the Federal Republic hopes to speed up the job and finish it in 15 years. In view of the timetable for the realization of the European Economic Community—also 15 years—this seems a desirable goal as well as an economic necessity.

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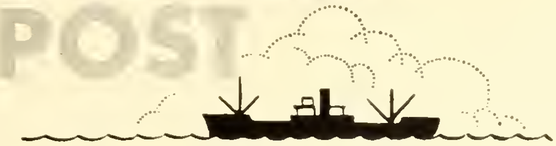

West Germany Importing Less Lard This Year

West Germany imported 19 percent less lard in the first half of 1958 than in the corresponding period of 1957. Increased local lard output and wider use of competitive vegetable oils contributed to the drop in foreign purchases.

Despite the overall decline, the Netherlands and Poland shipped substantially larger amounts to West Germany, while U.S. shipments declined 70 percent. Higher U.S. prices in relation to European prices accounted for much of the decrease in the U.S. share of the West German market.

U.S. Livestock Aiding Venezuela's Cattle Plan

Venezuela's 5-year livestock development program features regular shipments of beef breeding cattle from the United States. The first shipment, which arrived in Venezuela in mid-August, included 175 registered Brahman bulls, 160 registered Brahman heifers, and 500 crossbred and Santa Gertrudis heifers.

Venezuela has a buying mission in the United States to continue purchases. Shipments are scheduled for every 3 weeks on a freighter, which has been converted to a cattle boat and chartered by the Venezuelan Government for the next 2 years.

A sum equal to $200 million has been earmarked to cover costs of the program, which will also include developing and improving meat processing and distributing facilities. Under other phases, the program will provide credit to cattlemen to buy imported cattle, and will improve pastures, build fences, construct ponds, dig wells, and buy equipment. In addition, technical assistance will be made available to further improve production practices.

Malaya and Australia Sign New Trade Pact

The Federation of Malaya's new government has negotiated its first trade agreement—a 3-year pact with Australia.

Reported terms of the agreement will give Australia duty and quota concessions for several agricultural export products. Prominent among these is a quota of 80,000 tons of flour to be shipped to Malaya each year. Malaya will continue to give Australia preferences on shipments of processed milks, butter, and certain canned fruits. In addition, Australian wheat, tallow, and flour will still be admitted into the Federation duty free, and the duty on cheese will be reduced.

In return for these trading privilges, Australia will grant duty-free entry to Malayan rubber and will protect it against unfair competition from imports of natural or synthetic rubber from third countries. It will protect Malayan tin and continue its duty-free entry. Australia has also agreed not to raise the duty on Malayan timber. And it will aid imports of handicraft goods from the Federation through a special import licensing allocation of $123,000 for trade promotional purposes.

Colombia Barters Coffee For Wheat and Silos

Colombia has entered into a barter agreement with Syria for 9,500 metric tons of Syrian wheat to be paid for with $1.1 million worth of Colombian coffee. The wheat has already been shipped to Colombia, arriving at a time when local supplies were dangerously low.

Colombia is now planning a barter deal with Denmark to exchange coffee for grain silos. These would help solve a long-standing storage problem.

U.S. Seeking Outlets For Record Walnut Crop

The U.S. walnut industry is seeking export outlets for its bumper 1958-59 crop, which is expected to total about 85,000 tons compared with 66,600 tons last year.

Harvesting began in late September and trade sources indicate that commitments have already been made for shipments to Western Europe. Overall output in continental Europe is estimated a little above average this season, but the French crop is short.

Australia and Ceylon Sign Trade Agreement

A new trade agreement between Australia and Ceylon gives Australia a definite market in Ceylon for 30,000 tons of wheat flour this year and 100,000 tons each year in 1959 and 1960. In addition, 11,000 tons of Australian flour will be supplied to Ceylon under the Colombo Plan, and funds raised from its sale will be used to finance economic development projects in Ceylon.

On its side of the agreement, Australia promised Ceylon certain guarantees for its tea market in Australia for the duration of the pact. It also agreed to up its yearly imports of desiccated coconut from 9 million to 12 million pounds. And special consideration will be given to finding markets in Australia for new export items from Ceylon, mainly cottage industry products.

Spanish Orange Juice Exports Still Below Normal Levels

Spain's 1958 orange juice exports are expected to be above the drastically low level of 1957, but still not more than half of 1956 shipments. Shipments in 1957 totaled only 286,000 gallons compared with 1.8 million in 1956. The Spanish orange juice shortage has afforded U.S. processors increased opportunities to export to European soft drink bottlers.

The shortage of fruit for processing has resulted from the 1956 freeze, which killed or damaged a great number of trees. Shipments in 1959 are expected to increase substantially as production becomes more normal.

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Venezuela Increasing Its Imports of Hops

Venezuela's hops imports have been mounting steadily in recent years, paralleling the increase in beer consumption. Beer production was up from about 492,000 barrels in 1948 to 1.3 million in 1957. Since Venezuela does not grow hops, total needs must be supplied through foreign purchases.

The United States is the main shipper, furnishing nearly 518,000 pounds — 64 percent of requirements — in 1957. West Germany, supplying 19 percent of total purchases in 1957, was the second most important source. Other countries which sell hops to Venezuela include Belgium, Czechoslovakia, Italy (which produces no hops), and Yugoslavia.

U.S. Importing More French Glacé Cherries

French exports of glacé cherries to the United States have risen sharply in recent years—from 2,000 pounds in 1949-50 to nearly 5.6 million in 1956-57. And in the first 6 months of 1958 alone, they increased 14 percent over the corresponding period of 1957.

France's 1958 crop of bigarreaux cherries—the variety used for glacé fruit—is about 25 percent less than last year's crop and imports will be needed to furnish supplies for the glacé cherry industry. Most of these will come from Italy.

Although French farmers were getting 15 to 20 percent more for cherries in 1957 than in 1956, the New York price for the glacé product is up only slightly.

U.S. Coarse Grain Exports Set New Record in 1957-58

U.S. exports of coarse grains and products reached a new high in 1957-58—9,038,000 tons, or 7 percent more than the past record of 1955-56.

Mainly responsible was corn, with 5,205,000 tons, 21 percent more than in the previous record year 1956-57. Of the increase, the highly developed Western European countries accounted for about two-thirds. This corn took the place of feed wheat, which was in short supply because of the high quality of Europe's 1956-57 wheat crop. The largest increase in U.S. corn exports to any single country was to Mexico, under P.L. 480. Corn is a basic human food there, and local output usually suffices; but last year drought cut it.

Barley exports, 2,202,000 tons, were up 49 percent; grain sorghums, 1,183,000 tons, up 46 percent; oats held at 448,000 tons. For these grains too, Western Europe was the major market.

Denmark Restricts Imports Of Dollar Wheat and Flour

Denmark is restricting wheat and flour imports from the dollar area during the 1958-59 season to its International Wheat Agreement quota of 1.8 million bushels. Also, all dollar wheat must come from the United States or Canada and must be milled for food use. It cannot be re-exported. Last year, U.S. shipments to Denmark totaled 1.5 million bushels and those from Canada, 164,000 bushels.

Wheat purchased from countries other than the United States and Canada during 1958-59 may also be charged against the IWA quota, at the choice of the grain trader. This would further limit U.S. and Canadian shipments to Denmark.

The new policy is on an "until further notice" basis and could be abandoned at any time during the year.